

University of California, Berkeley
Department of Electrical Engineering and Computer Sciences
EE123: DIGITAL SIGNAL PROCESSING

INFORMATION SHEET

Fall 2006

Lectures:

Tuesday and Thursday: 11:00 am – 12:30 pm
203 McLaughlin

Lecturer:

Professor A. Zakhor
avz@eecs.berkeley.edu
507 Cory Hall
ext. 3-6777

Prof. Office Hours: Thursday, 12:30 pm – 1:30 pm.

Teaching Assistant:

Chouhao Yeo
zuohao@EECS.Berkeley.EDU

Office Hours: Monday, 5:00 – 6:30 pm, and Wednesday, 12:00 – 1:30 pm. Office location to be determined.

Discussion Section:

Monday, 4 – 5 pm, and Wednesday, 11:00 to 12:00.

Course Administrative Assistant:

Rosita Alvarez
253 Cory Hall
ext. 3-4976

Course Handouts:

Handouts not picked up during lectures can be found on the course web site, <http://www-inst.eecs.berkeley.edu/~ee123>, and graded problem sets can be found in 253 Cory from Rosita Alvarez.

Prerequisite: EE120, graduate standing, or consent of the instructor.

Texts:

- A. V. Oppenheim and R. W. Schaffer, “Discrete Time Signal Processing,” Prentice Hall, 1989.
(**required**)
- B. G. Strang and T. Nguyen, “Wavelets and Filter Banks,” Wellesley. Cambridge Press,
(**recommended**)

Outline of Topics:

1. Fast review of LTI systems, DTFT, sampling.
2. Multirate signal processing, Bilateral Z Transform.
3. Discrete Fourier transform, Fast Fourier Transform.
4. Quantization, finite word length effects
5. FIR and IIR filter design techniques;
6. Filter banks, Wavelets
7. Applications: speech and video processing.

Homework:

1. Problem sets will be issued approximately once a week. They will contain Matlab problems. Problem sets are due in class, either on Tuesday or Thursday, at the beginning of the class.
2. Problem Sets handed in late will not be accepted unless consent is obtained from the teaching staff prior to the due date.
3. Some lectures might move from Tuesday or Thursday to Friday or Monday or Wednesday. This will be done with advance notice. Please make sure that you either attend these make up lectures, or watch the video tapes of the lecture. The course is digitally recorded, webcast, and stored to be viewed on demand. Look up the URL address for the video's on the class web page. Also, to view the video's of the lectures given by the instructor in Fall 2003 by going to: http://www-video.eecs.berkeley.edu/~avz/video_lectures.html

Note: Pdf version of the lecture notes will be on line at the class web page by the end of the day on which the lecture was given.

Midterms: (Date is tentative)

In class, Oct. 12th , Dec. 7th.

Grade:

Homework: 20 percent

Midterm : 35 percent

Midterm : 35 percent

Class attendance and participation: 10%